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PLANT IMMIGRANTS.

No. 177. JANUARY, 1921.

GENERA REPRESENTED IN THIS NUMBER.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is largely made up from notes received from agricultural explorers, foreign correspondents, cooperators, and others, relative to the more important plants which have recently been received by the Office of Foreign Seed and Plant Introduction of the Department of Agriculture; in it are also contained accounts of the behavior in America of plants previously introduced. Descriptions appearing here are revised and published later in the Inventory of Seeds and Plants Imported.

Applications from experimenters for plants or seeds described in these pages may be made to this Office at any time. As they are received the requests are placed on file and when the material is ready for the use of experimenters it is sent to those who seem best situated and best prepared to care for it. The plants or seeds here described (except such as are distributed direct or are turned over to specialists in the Department who are working on investigational problems) are propagated at our Plant Introduction Field Stations; and when ready to be distributed are listed in our annual check lists, copies of which are sent to experimenters in the late fall. It is not necessary, however, to await the receipt of these lists should one desire to apply for plants which are described herein.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant breeders and experimenters. Every effort will be made to fill specific requests for experimental quantities of new or rare foreign seeds or plants.

David Fairchild.
Agricultural Explorer in Charge

Office of Foreign Seed and Plant Introduction,
Bureau of Plant Industry,
U. S. Department of Agriculture.

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Aconitum fischeri (Ranunculaceae), 51745. From Edinburgh, Scotland. Seeds presented by Dr. Isaac Bayley Balfour, director, Royal Botanic Garden. As a garden plant this is one of the best, and well worth growing in any collection of hardy plants. The growth reaches 4 to 6 feet, terminated by a fine panicle of large showy pale-blue flowers. It is an autumn-flowering species from Siberia and Kamchatka.

Medicinally, this plant is known as Japanese aconite, and is imported quite largely into Europe and frequently finds its way into the United States. The Japanese aconite contains as its active constituent an alkaloid called japaconitine, which is now generally believed to be identical with aconitine (the alkaloid in *A. napellus*). (Adapted from Flora and Sylva, vol. 1, p. 214; and National Standard Dispensatory, p. 98 and 101.)

Aconitum variegatum (Ranunculaceae), 51474. **Monkshood.** From Edinburgh, Scotland. Seeds presented by Dr. Isaac Bayley Balfour, director, Royal Botanic Garden. A large plant reaching 1.5 m. in height, found in certain humid forests of the Swiss Alps and bearing from July to September beautiful blue flowers often streaked with white. The upper sepal is the shape of a helmet and at least twice as tall as wide. At the base of each flower stalk the plant usually bears 2 or 3 adventitious roots swollen into tubercles. The tubers are smaller than those of *A. napellus* (the officinal variety of aconite), but closely resemble small specimens of it. (Adapted from Bonnier, Flore Complète Illustrée en Couleurs de France, Suisse, et Belgique, vol. 1, p. 39.)

Befaria phillyreaefolia (Ericaceae), 51786. From Bogota, Colombia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 488a. From the mountains near Sibate, Cundinamarca, at an altitude of about 9,000 feet. A bushy shrub about 5 feet high, with handsome tubular flowers, deep rose-pink, and about 1 inch in length." (Popenoe.)

Berberis quinduensis (Berberidaceae), 51795. **Barberry.** From Bogota, Colombia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 500a. 'Tachuelo,' from El Penon, near Sibate, Cundinamarca, at an altitude of 9,300 feet. An arborescent shrub or small tree, 20 feet high, with small, stiff, spiny, holly-

like leaves; small, golden yellow, fragrant flowers; and oval, blue-black berries about an inch long. An attractive thing, particularly when in bloom." (Popenoe.)

Berberis rigidifolia (Berberidaceae), 51787. **Barberry.** From Bogota, Colombia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 492a. From the mountains near Sibate, Cundinamarca, at an altitude of about 9,000 feet. A thorny shrub about 6 feet high, with small leaves, small deep-yellow flowers, and oval black fruits about one-fourth of an inch long. An attractive ornamental shrub, recommended for trial in the South and on the Pacific Coast." (Popenoe.)

Brownea grandiceps (Caesalpiniaceae), 51796. From Bogota, Colombia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 497a. A magnificent flowering tree, native to the Magdalena Valley in Colombia. These seeds are from Guaduas, Cundinamarca, at an altitude of about 3,300 feet. The tree is not large, - about 20 feet in height, - but it produces flame-scarlet flowers in compact clusters (they could almost be termed heads) 6 to 8 inches long and broad. While this plant is tropical, the fact that it is grown at Guaduas makes me think that it might succeed in southern Florida." (Popenoe.)

Crotalaria sericea (Fabaceae), 51839. From Gizeh, Mouderieh, Egypt. Seeds presented by Mr. Thomas W. Brown, director, Horticultural Section. A robust undershrub, 1 to 1.5 m. high, with oblong or broadly spathulate oblong leaves which are moderately firm in texture, glabrous above, finely silky beneath, 7.5 to 15 cm. long. The foliaceous stipules are persistent. The yellowish-purple flowers 22 mm. long are in 20 to 40-flowered racemes, 3 to 5 dm. long. The plant is native to India, ascending to an altitude of 3,000 feet in Kumaon. It is cultivated as a garden flower in the Punjab, India, where it is known as Sauni; but is apparently never cultivated there as an agricultural product, though fiber is sometimes prepared from it. (Adapted from Rock, Leguminous Plants of Hawaii, p. 127.)

Ilex sp. (Aquifoliaceae), 51788. From Bogota, Colombia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 494a. From Sibate, Cundinamarca,

CHINESE DRY-LAND ELMS THRIVING IN THE COACHELLA VALLEY, CALIFORNIA.

(*Ulmus pumila* L., S. P. I. No. 22975.)

Mr. William R. Faries, who owns the trees, writes as follows: "This row of *Ulmus pumila*, one-eighth of a mile long, gets water only when an adjoining field of alfalfa is watered, say twice a month, and but one furrow at that. I am glad the trees are nearly leafless at this time, as their characteristics show best thus." (Photographed by William R. Faries, Coachella Valley, Calif., January 7, 1920.)

ROOTS OF AMERICAN-GROWN CHINESE GINGER.

(*Zinziber officinale* Rosc., S. P. I. No. 38180.)

Roots of this ginger were collected at Feitcheng, China, in 1914 and sent to this country by the late Mr. F. N. Meyer, agricultural explorer. As will be seen from the illustration, the plants as grown the past season at the Yarrow Plant Introduction Field Station, near Rockville, Md., have made excellent growth, which indicates that ginger can at least be successfully grown here. The plants were set in the open ground on May 31, 1919, on an alluvial piece of land, and the roots harvested in late October. (Photographed by Peter Bisset, at the Yarrow Plant Introduction Field Station, near Rockville, Md., October 31, 1919; P25590FS.)

at an altitude of about 8,600 feet. A small tree, wild in this region, that seems worthy of trial as an ornamental plant. It has oval leaves about 3 inches long, and produces an abundance of small berries which are at first green, becoming cream colored, then red, and finally, when fully ripe, almost black. They are used locally for making ink." (Popenoe.)

Lupinus cruckshanksii (Fabaceae), 51798. **Chocho.** From Columbia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 496a. From a garden on the road between Sibate and El Penon, at an altitude of about 9,400 feet. Several species of lupine are known in Cundinamarca under this common name. Some are wild, some cultivated. The one represented by these seeds is a handsome half-woody shrub, a favorite garden plant on the sabana of Bogota. It reaches a height of about 6 feet, and is usually broad and bushy in habit. Above the attractive foliage rise numerous spikes of varicolored pealike flowers. The predominant colors are blue, lilac, white, and yellow. This is a plant well worth cultivating in the United States. In California and Florida it will probably grow as a perennial and it might be possible to cultivate it elsewhere as an annual." (Popenoe.)

Mutisia clematis (Asteraceae), 51789. From Bogota, Columbia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 487a. A climbing plant, wild and cultivated around the edges of the sabana of Bogota, at altitudes of 8,500 to 9,500 feet. It reaches a height of about 20 feet. Its grayish green foliage is graceful, and the bright crimson flowers which suggest small single dahlias, are about 2 inches in diameter." (Popenoe.)

Myrciaria sp. (Myrtaceae), 51626. From Caracas, Venezuela. Seeds presented by Mr. Henry Pittier. "'Guayabo pesjua.' This is a small tree with a spreading, depressed crown. The small flowers are white; the fruits are globose, slightly depressed, 2.5 to 4 cm. long, with a smooth dark-purple skin, a white, sweet-acidulate mesocarp, and with 1 to 4 seeds. It is a great favorite with the natives and is often cultivated. In fact, I have seen it only under cultivation, although I am assured it also grows wild around Valencia." (Pittier.)

Parthenium argentatum (Asteraceae), 51700. **Guayule.** From Marfa, Texas. Plants presented by Mr. R. A. Epperson. The guayule is a spreading, much-branched shrub, rarely as much as 3 feet in height, with small, greenish, silvery gray leaves, and a profusion of small yellow flowers borne in loose clusters on slender stems. The shrub is native to a comparatively small area in southwestern Texas and northwestern Mexico. Unlike most other rubber-producing plants, the bark of the guayule contains no latex, the rubber being in the cellular tissue of the epidermis and to a certain extent in the branches and leaves. The dried plants are ground and the rubber is extracted by one of several chemical processes. Although guayule rubber is not of the highest grade, it has a possible future because the plant will grow in semi-arid regions, it does not suffer from light frosts after passing the seedling stage, and the plants may be gathered throughout the year. (Adapted from Commerce Reports No. 149, June 26, 1918.)

Polakowskia tacaco (Cucurbitaceae), 51606. From San Jose, Costa Rica. Fruits presented by Mr. Oton Jiménez, chief, Department of Botany, National Museum. "A cucurbitaceous plant, the fruit of which is used as a green vegetable. It is a near relative to the chayote, but the fruit is smaller, fusiform, beset with stiff spines at the base, and has a different flavor. It is one of the primitive foods of the natives of Costa Rica, where it grows wild in moist, shady places of the temperate region, and its use as a vegetable has been readily accepted by the Spanish Costa Ricans. The fruits, about 2½ inches long and 1½ inches broad, hang from short stems and are picked while still green. After removal of the basal spines the fruits are boiled in water, or pickled, or made into preserves. They are also a favorite addition to the native soups." (Henry Pittier.)

"The kinds which are cultivated contain very little fiber. They are used in many ways, - pickled, as a dessert, as a vegetable, etc., - and are always very popular with us. The most common method of preparation consists in cooking the entire fruit with some of the leaves. When the fruit is cooked the skin peels off readily, and on pressing it with the thumb and finger the seed comes out easily. All that remains, with the exception of a little fiber, is eaten." (Jiménez.)

Tibouchina sp. (Melastomaceae), 51799. From Bogota, Colombia. Plants collected by Mr. Wilson Popenoe, agricultural explorer. "No. 502. 'Siete-cueros.' From El Penon, near Sibate, Cundinamarca, at an altitude of 9,300 feet. A handsome arborescent shrub, wild in several parts of Cundinamarca, and cultivated in the gardens and dooryards of Bogota. It reaches about 15 feet in height, and produces flowers about 2 inches across; when these first open they are purplish red, and as they grow older they change to bluish purple and sometimes to deep blue. A plant which merits a trial as an ornamental." (Popenoe.)

Vallea stipularis (Elaeocarpaceae), 51800. From Bogota, Colombia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 501a. 'Raque.' From Sibate, Cundinamarca, at an altitude of about 9,000 feet. A small tree, common in this region. It has attractive foliage, and during July, August, and September produces small clusters of rose-red flowers, followed by wrinkled fruits half an inch in diameter. An attractive plant which should be tested as an ornamental." (Popenoe.)

Vitex cuneata (Verbenaceae), 51604. From Kaduna, Northern Provinces, Nigeria. Seeds presented by the director, Department of Agriculture. "'Ngalibi.' A tree, with dark gray bark and leaves not unlike, though somewhat larger than those of the horse-chestnut which it also resembles in the shape of its strong-smelling flowers. Ink is prepared from the bark, and the black fruit is used for food." (Shultze, The Sultanate of Bornu, p. 97.)

Notes on Behavior of Previous Introductions.

Mrs. Ida Toepfer, Warren, Ohio, in a letter received September 27, 1920, writes:

"The English walnut, *Juglans regia*, S.P.I. No. 44 200), sent me 3 years ago, I kept in a pot the first year, and in a box in the cellar all the next winter. Last spring I set it out; in the fall I put over it an open barrel filled with leaves, and with a V-shaped cover. The plant came through the severe winter of 1917-18, in excellent condition and is now a large tree. In another year I think the tree will be winter-hardy with a heavy mulch over the roots."

"I treated the 3 almond trees (*Prunus mume*, S.P.I. No. 45523) in the same way and this spring all of them were covered with pretty pink applelike bloom; there were no fruits, but next year I hope to have some. The apricot, similarly winter-protected, bore 3 delicious fruits. My lemon tree (*Citrus limonia*, S.P.I. No. 23028) took the prize at the county fair this fall. It is 4 feet in height and bore 7 lemons.

"The pai ts' ai (*Brassica pekinensis*, S.P.I. No. 44935) is extraordinarily good and is now a regular crop with us."

Mr. J. P. Wilson, Landon, Miss., reports in a letter dated December 28, 1920:

"The *Lithocarpus cornea* (S.P.I. No. 27925) sent me March 21, 1912, is a beautiful tree, well-branched almost from the ground, and 14 feet 4 inches in height. The foliage is a rich green. The tree bloomed abundantly during June and has now a few very small acorns. The blossoms attracted swarms of honey bees and other insects for a long period."

January 10, 1921, Mr. E. L. Lord, Ruston, La., writes:

"In my opinion the 'Cunningham' is the best citrange (*Poncirus trifoliata x Citrus sinensis*) for this region: there is no frost injury here at all; the fruit is palatable for 'ades,' etc., and makes the best 'lemon' pies I have ever eaten.

"One chayote vine (*Chayota edulis*) produced 1¾ bushels of fruit here last season. My best record before for this latitude is about three-fourths of a bushel. This large, light green variety is surely an addition to our fall and winter vegetables, as they keep well when wrapped in paper and stored in a cool place."

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BUREAU OF PLANT INDUSTRY
OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
WASHINGTON, D. C.

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